MILLER, E.E., kandidat tekhnicheskikh nauk; GAL'TSOV,A.D., redaktor; BILINKIS, M.S., inzhener, retsenzent; VAKHLAMOV, I.A., retsenzent; SHUMILKIN, V.K., retsenzent; PARFENENKO, K.V., redaktor; MATVEYEVA, Ye.N., tekhnicheskiy redaktor

[Setting technical norms in machine building] Tekhnicheskoe normirovanie v mashinostroenii. Pod red. A.D.Gal'tsova. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1957. 363 p. (MLRA 10:4)
(Machinery industry--Production standards)

MININ, P.I.;SHUMILKIN, V.K.

Analyzing assembly line production at agricultural machinery and tractor plants. Trakt. i sel'khozmash. no.11:38-41 N'59.(MIRA 13:3)
(Agricultural machinery industry) (Tractor industry)

ZAALISHVILI, Sh.D.; KOLYSKO, L.E.; Prinimali uchastiye: SHUMILKINA, M.I.;
D'YACHKOVSKAYA, O.S.

Second virial coefficient of vapors and their mixtures. Part 3: Acetone - chloroform system. Zhur.fiz.khim. 35 no.11:2613-2615 N '61.
(MIRA 14:12)

1. Gor'kovskiy politekhnicheskiy institut imeni A.A.Zhdanova.
(Acetone)
(Chloroform)

ZAALISHVILI, Sh.D.; KOLYSKO, L.E.; Prinimala uchastiye: SHUMILKINA, M.I.

Second virial coefficient of vapors and their mixtures. Part 3. The system diethyl ether - methyl iodide. Zhur. fiz. khim. 36 no.4:846-848 Ap '62. (MIRA 15:6)

1. Gor'kovskiy politekhnicheskiy institut imeni A.A.Zhdanova.
(Ethyl ether) (Methane) (Virial coefficients)

LEONT'YEVA, A.A.(Gor'kiy); SHUMILKINA, Ya.I. (Gor'kiy)

Protein metabolism in the skin and in the subcutaneous tissue in elephanthiasis. Arkh.pat. 18 no.5:62-64 '56. (MIRA 9:12)

1. Iz Gor'kovskogo nauchno-issledovatel'skogo instituta vosstanovitel'noy khirurgii, ortopedii i travmatologii (dir. M.G.Grigor'yev)
(PROTEINS, metabolism,
skin in elephanthiasis (Rus))
(SKIN, metabolism,
proteins, in elephanthiasis (Rus))
(ELEPHANTHIASIS, metabolism, in,
protein in skin (Rus))

SHUMILO, I. A., inzhener; KHEYFMAN, G., inzhener.

Diesel stopping device for cases of oil pressure drop in the main distributor. Mor.flot.16 no.6:28-29 Je '56. (MIRA 9:9)
(Diesel engines) (Lubrication and lubricants)

ARTEM'YEV, Ye.I.; VEGERA, N.L.; [redacted]VOLKOV, V.M.; PUL'MANOV, N.V., kandidat tekhnicheskikh nauk, retsenzent; LIVSHITS, M.L., inzhener, redaktor; UVAROVA, A.F., tekhnicheskiy redaktor

[D-6 diesel engine; installation, assembly and operation] Dizel' D6; ustroistvo, montazh i ekspluatatsiia. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1957. 190 p. (MLRA 10:10)
(Diesel engines)

SHUMILO, I.A., inzh.; KHEYFMAN, G., inzh.

Remote control of diesel engines. Mor.flot 17 no.8:18-19 Ag '57.
(MIRA 10:10)

(Marine diesel engines)
(Remote control)

SHUMILO, Ignat Afanas'yevich; VEGERA, Nikolay Leont'yevich; VOLKOV,
Viktor Mikhaylovich; DUGINA, N.A., tekhn. red.

[D 6 diesel engines; design, assembly and operation]Dizeli
tipa D6; ustroistvo, montazh i ekspluatatsiia. Moskva,
Mashgiz, 1962. 291 p. (MIRA 15:9)
(Diesel engines)

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

SHUMILO, I.M.

8

Mineralogical composition of a manganese-rich slag. D. S. Belyankin and I. M. Shumilo. *Trav. inst. pétrog. acad. sci. U. R. S. S.* No. 13, 241-6(1938); *Mineralog. Abstracts* 7, 286-7(1939).—There were sepd. from a Mn-rich slag: Mn-spinel, Al_2O_3 61.41, FeO 0.28, MnO 32.28, MgO 4.10, CaO 1.92; d. 3.98, *n* 1.79; Ca aluminate with Al_2O_3 75.0, CaO 20.20% monoclinic; and Mn aluminate with Al_2O_3 74.70, MnO 14.22, MgO 3.08 and BaO 1.52, d. 3.68, *a* 5.32 A. C. A. Silberrad

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

SHUMILO, I. M.

AUTHOR INDEX

MATERIALS INDEX

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

E-2

Ivanov, B. V., Tsetkov, A. J., and Shumilo, I. M. EGYPTIAN-BLUE AND REFRACTORIES FOR COPPER-SMELTING FURNACES. *Compt. rend. acad. sci. U.R.S.S.*, 21, 685-87 (1938).—Egyptian-blue (I) has been discovered in Dinas brick of a smelting-furnace roof of the Kyshym plant. The mineral is confined exclusively to the transitional zone of the brick, i.e., that part of the brick subjected to comparatively low temperature. The mineral has tetragonal symmetry and the crystals show a tendency to produce lamellar forms along the basopinacoid. Analysis indicates that the mineral is a compound of CuO. By sintering metallic Cu or Cu oxide, carbonate, or acetate at 850° for 20 hr. with $CaCO_3$ and SiO_2, using alkali carbonate as flux, a yield of >50 weight-% of the charge of (I) is obtained.

MATERIALS INDEX

COMMON ELEMENTS

SHUMILO, I. M.

"New Data on the Optics and Chemistry of Corundum," Dok. AN, 30, No. 8, 1941.

SHUMILO, N.G.

Method for a physiological evaluation of the work load in general schools. Pediatriia 37 no.6:11-16 Je '59.
(MIRA 12:9)

1. Iz kafedry gigiyeny detey i podrostkov Kiyevskogo meditsinskogo instituta.
(SCHOOL HEALTH,
in Russia, physiol. evaluation of work load (Rus))

SPASSKIY, A.A., akademik; SHUMILO, R.P.

Phenomenon of the postlarval development of the proboscis and hooks in cestodes of the genus Triaenorhina, n. gen. (Paruterinidae). Dokl. AN SSSR 164 no.6:1436-1438 O '65.

(MIRA 18:10)

1. AN Moldavskoy SSR (for Spasskiy).

SONIN, M.D.; SHUMILO, R.P.

New genus of filariids Pseudlemdana nov. gen. from the subcutaneous cellular tissue of birds. Trudy Gel'm. lab. 14:194-196 '64.
(MIRA 17:10)

SHUMILO, R.P.; DEMENT'YEVA, S.P.

Dynamics of chicken infestation with helminths in central Moldavia. Izv. AN Mold. SSR no.5:20-27 '63.

(MIRA 17:11)

[illegible], [illegible]

"The Parasite Fauna of Fish of the Lower Course of the Dnestr River." Cand Biol Sci, Odessa U, Odessa, 1953. (RZhBiol, No 1, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (13) SO: Sum. 598, 29 Jul 55

SHUMILO, R.P.

Geographical distribution of parasites on fish in the lower reaches of the Dniester River. Pratsi Od. un. zbir. mol. vchen. un. 148 no.3:279-281 '58 (MIRA 13:3)
(Dniester River--Parasites--Fishes)

SHUMILO, R.P.

Nematodes of corvid birds in the central districts of the Moldavian S.S.R. Izv. Mold. fil. AN SSSR no.3:13-32 '61. (MIRA 17:6)

SHUMILOV, A.

Mystery of a code. Tekh. mol. no.5:26-27,31 My '62. (MIRA 15:6)
(Chromosomes)

KUCHERYAVYY, F.I., dotsent; SHUMILO, V.A., inzh.; BEKKERMAN, Ye.Ya., inzh.

Estimating parameters of the network of hole positioning on the basis of the stressed state of the massif caused by the detonation of two elongated charges. Izv. vys. ucheb. zav.; gor. zhur. 8 no.1: 53-56 '65. (MIRA 18:3)

1. Dnepropetrovskiy ordena Trudovogo Krasnogo Znameni gornyy institut imeni Artema. Rekomendovana kafedroy otkrytykh gornykh rabot.

GAYEK, Yu.V., kand. tekhn. nauk; SHUMILO, V.A., inzh.

Stress waves of the central and axial symmetry in an elastic and infinite medium, and the analysis of current views about their nature. Vzryv. delo no.57/14:90-105 '65. (MIRA 18:11)

1. Dnepropetrovskiy gornyy institut.

SHUTILOV, Docent [illegible]

Railroads - Electric Equipment

Calculating cables with a minimum amount of copper for direct current rail circuits. Sbor. nauch. rab. LETIIS, No. 3, 1949.

9. MONTHLY LIST OF RUSSIAN ACCESSIONS, Library of Congress, December 1952. Uncl.

SHUMILOV, A.D.

27879 Metod rascheta kabeley rel'-sovykh tsepey postoyannogo toka na
ninimum medi. Sbornik Nauch. rabot (leningr. elektrotekhn, in-t
inzhenerov signalizatsii i svyazi zh-d. transporta), vyp. 3, 1949. s. 9z-101

SO: Letopis' Zhurnal'nykh Statey, vol. 37, 1949

SHUMILOV, A.D., kand. tekhn nauk, dots.

Generalized equations used in designing cables for electric centralized traffic control units. Sbor. nauch. trud. LETIIZHT no.5:5-32 '53. (MIRA 11:3)

(Railroads--Signaling--Interlocking system)
(Electric cables)

SHUMILOV, A.D., dotsent, kandidat tekhnicheskikh nauk.

Method of calculating the most efficient voltages for power sources of central electric power installations. Sbor.nauch.trud.LETIIZHT no.6:323-336 '54. (Electric power) (MLRA 9:1)

32 (3) SOV/112-57-5-10923

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1957, Nr 5, p 193 (USSR)

AUTHOR: Shumilov, A. D.

TITLE: Method for Designing Mains and Battery Voltage in the Centralized Traffic Control Installations Supplied by the Mains (Metod rascheta magistrali i napryazheniya batarei pri magistral'nom pitanii v ustroystvakh elektricheskoy tsentralizatsii)

PERIODICAL: Sb. Leningr. in-ta inzh. zh.-d. transp., 1956, Nr 151, pp 314-320

ABSTRACT: Selection of an appropriate battery voltage and of mains conductor-size for a general case is fairly difficult. For that reason, formulae have been deduced to determine: (1) required cables and the minimum voltage loss in the mains, and (2) optimum battery voltage, for two specific cases where local branch circuits are of heavier or normal size.

T.I.L.

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SHUMILOV, A.D., kand.tekhn, nauk, dots.

Method of comparing feed systems in electric interlocking installations. Sbor.LIIZHT no.161:219-231 '58. (MIRA 11:12)
(Railroads--Signaling--Interlocking systems)

SHUMILOV, A.D., kand.tekhn.nauk, dotsent

Generalized formulas for calculating cables of track circuits for minimum copper content. Sbor. trud. LIIZHT no.179:9-14 '61. (MIRA 16:11)

SHUMILOV, A.S., kand.tekhn.nauk, dotsent

Use of program regulators in TC systems. Sbor. trud. LIIZHT no.205: 46-57 '63. (MIRA 18:1)

SHUMILOV, A.I.

Experience with using a beam-cantilever crane. Transp.stroi. 6 no.5:14-15 My '56. (MLRA 9:8)

1. Glavnyy inzhener Yugo-zapadnoy mostostroitel'noy kontory tresta Mostoremtonnel'.
(Cranes, derricks, etc.)

SHPAKOV, B.V., kandidat tekhnicheskikh nauk. SHUMILOV, A.N., kandidat tekhnicheskikh nauk.

Reinforced concrete poles for electric railroad contact circuits. Transp.stroi. 6 no.1:22-24 Ja '56. (MLRA 9:5)
(Electric lines--Poles)

SPAKOV, B.V., kandidat tekhnicheskikh nauk; Shumilov, A.N., kandidat tekhnicheskikh nauk; SHCHERBAKOV, A.V., inzhener.

Construction of small station buildings using reinforced concrete panels. Transp.stroi. 6 no.6:25-26 Je '56. (MIRA 9:9)
(United States--Railroads--Stations)

POTAPOV, Mikhail Georgiyevich; SHUMILOV, A.N., kand. tekhn. nauk, red.;
BOBROVA, Ye.N., tekhn. red.

[Protecting railroad track from snow] Zashchita zheleznodorozhnogo puti ot snega. Moskva, Gos. transp. zhel-dor. izd-vo, 1958. 119 p.
(Railroads--Snow protection and removal) (MIRA 11:8)

YEVDOKIMOV, V.G.; PETYGIN, V.I.; PYZHOV, V.S.; prinimali uchastiye: SMIRNOV, V.M.; KISELEV, L.N.; SHUMILOV, A.S.; VINOKUROV, V.K.; TIKHONOV, N.A.

Investigating granulators as controlled systems. TSvet. met. 35 no.6: 41-46 Je '62. (MIRA 15:6)
(Ore dressing) (Granular materials)

SHUM[illegible]OV, A.V.

One particular case of the theory of T-S curves. Okeanologiia 4
no.3:380-385 '64. (MIRA 18:1)

L 04844-67 EWT(1) GW

ACC NR: AP7000249 SOURCE CODE: UR/0213/66/006/003/0519/0528

AUTHOR: Vasil'chikov, N. V.; Ignatov, Ye. I.; Shumilov, A. V.

11

B

ORG: Department of Oceanology, Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvenyy universitet, Kafedra okeanologii)

TITLE: Redesign of the 'Okean' hawser winch into a cable winch

SOURCE: Okeanologiya, v. 6, no. 3, 1966, 519-528

TOPIC TAGS: winch, connecting cable

ABSTRACT: The redesign of the "Okean" hawser winch into a cable winch has been described in detail, accompanied by seven detailed diagrams and phtotgraphs. Detailed directions are given for splicing the cable (a method developed by the All-Union Scientific Research Institute of Geophysics); the diameter of the cable to all intents and purposes is not enlarged at the splicing point and there is no change of the mechanical and electrical characteristics of the cable. The redesigned winch and the mentioned splicing method have successfully withstood all tests. Orig. art. has: 7 figures. [JPRS: 37,058]

SUB CODE: 13 / SUBM DATE: 08 Apr 65

Card 1/1 UDC: 551.46.073: 621.866

0923 0795

SHUMILOV, B.

Saint Petersburg, 1904, frozen cranberries. Izobr. i rats. no.4:30-31 '63. (MIRA 16:7)

(Food, Frozen)

SHUMILOV, D.V., prepodavatel' elektrotekhniki

Power factor in alternating current circuits. Politekh.obuch. no.12:48-53 D '58. (MIRA 11:12)

1. Shkola No.1 g. Chelyabinsk.
(Electric currents, Alternating)

L 10868-65 EWA(k)/EWT(1)/EEC(t) AFTC(p)/ESD(gs)/ASD(a)-5/AS(mp)-2

ACCESSION NR: AR4046541 S/0058/64/000/008/E023/E024

AUTHORS: Kleshchev, G. V.; Shumilov, D. V. B

SOURCE: Ref. zh. Fizika, Abs. 8E177

TITLE: Anomalous scattering of x rays by small crystals of the separating beta phase during the later stages of decomposition of a supersaturated solid solution of zinc in aluminum (AlZn)

CITED SOURCE: Tr. Chelyab. gos. ped. in-t, v. 2, 1964, 191-194

TOPIC TAGS: x ray scattering, anomalous scattering, solid solution, aluminum alloy, anomalous scattering region, crystal lattice structure

TRANSLATION: Date are presented on the x-ray structure investigation of the anomalous scattering of x-rays by samples made of supersaturated solid solutions of Al--40% Zn, quenched from 450C and tempered at 240C for 1 hour (stage III of the decomposition). The form of the

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L 10868-65
ACCESSION NR: AR4046541

0

anomalous scattering regions (ASR) was investigated. It is found that one approximately-rectangular ASR of plate-like form is observed in the vicinity of each site of the (013) type. The large side of the rectangle is parallel in the vicinity of the (013) site to the site line [111], and the length of the ASR is 60×10^{-3} Å^{-1} (in reciprocal space). The plate-like form of the ASR is connected with the fact that inside of the single crystal there is contained a large number of β-phase crystallites, the crystal lattices of which are turned relative to the lattice of the initial crystal by small angles, about a definite axis. A cylindrical ASR is connected with the reciprocal-lattice site of each crystallite. Owing to the rotation of the crystallites about a fixed axis, the cylindrical ASR form a plate-like ASR.

SUB CODE: SS ENCL: 00

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L 10869-65 EWT(l)/EEC(t)/EEC(b)-2 Pi-4 IJP(c)/ESD(t)/ESD(gs)
ACCESSION NR: AR4046540 S/0058/64/000/008/D056/D056

AUTHORS: Kleshchev, G. V.; Shumilov, D. V. B

SOURCE: Ref. zh. Fizika, Abs. 8D426

TITLE: Small angle scattering of light 21 by oriented particles

CITED SOURCE: Tr. Chelyab. gos. ped. in-t, v. 2, 1964, 180-184

TOPIC TAGS: light scattering, small angle scattering, polymer particle, oriented polymer particle, x ray diffraction

TRANSLATION: For an analysis of the small-angle light scattering by solutions containing oriented polymer particles, the authors use a geometrical interpretation of the x-ray diffraction problem. The possibility is discussed of using the procedure of light scattering at small angles for a determination of the dimension and shape of the scattering particles and the direction of their orientation. V.K.

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L 10869-65

ACCESSION NR: AR4046540

0

SUB CODE: OP **ENCL:** 00

Card 2/2

[illegible]

[illegible]

Toward a simple method of evaluating textile materials. Tekst. prom. No. 5, 1952.

Monthly List of Russian Accessions, Library of Congress, August 1952. UNCLASSIFIED.

1. SHUMILOV, G. A., Eng.

2. USSR (600)

4. Yarn - Testing

7. Mechanism for detecting flaws in yarn. Tekst.prom., 12, no. 12, 1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Unclassified.

SHUMILOV, G. A., (Engr)

Textile Technology

Dissertation: "Evaluation of the Fineness of Cotton Yarn." Cand Tech Sci, Moscow Textile Inst, 11 Mar 54. (Vechernyaya Moskva Moscow, 1 Mar 54)

SO: SUM 213, 20 Sep 1954

SHENAYEVA,K.I.; SHUMILOV,G.A.; FILATOVA,O.A.

Hungarian instruments for the testing of textiles and fibers.
Tekst.prom.15 no.7:42-45 Jl'55. (MLRA 8:10)
(Hungary--Textile industry--Testing)

IVANOV, S.S., kandidat tekhnicheskikh nauk; SHUMILOV, G.A., kandidat tekhnicheskikh nauk.

Automatic determination of the number of flaws in yarn. Tekst. prom. 17 no.3:41-42 Mr '57. (MLRA 10:4)
(Yarn--Testing) (Electronic instruments)

SHUMILOV, G.A.

Evaluating the finish of twisted yarn. Tekst. prom. 17 no.4:44 Ap '57.
(Yarn--Testing) (MLRA 10:4)

SHUMILOV, G., nauchnyy sotrudnik

Nylon is a valuable material. Mest. prom. i khud. promys. 2 no.6:12-13 Je '61. (MIRA 14:7)

1. Nauchno-issledovatel'skiy tekhnokhimicheskiy institut Gosmestpromy RSFSR, g. Moskva.
(Salvage(Waste, etc))

SHUMILOV, G.A.

Some problems in the technical testing of cotton spinning.
Izv.vys.ucheb.zav.; tekh.tekst.prom. no.5:153-154 '61.
(MIRA 14:11)

1. Laboratoriya vtorichnogo syr'ya Nauchno-issledovatel'skogo
tekhnokhimicheskogo instituta.
(Cotton yarn--Testing)
(Cotton machinery)

SHUMILOV, G.A., starshiy nauchnyy sotrudnik

Is it necessary to apply carbonization in the production of reclaimed wool? Tekst. prom. 22 no.7:23-24 Jl '62.
(MIRA 17:1)

1. Nauchno-issledovatel'skiy institut sherstyanoy promyshlennosti.

SHUMILOV, G.A., kand.tekhn.nauk, starshiy nauchnyy sotrudnik

Methods of determining the length and irregularity of fibers.
Tekst.prom. 22 no.12:63-65 D '62. (MIRA 16:1)

1. TSentral'nyy nauchno-issledovatel'skiy institut sherstyanoy promyshlennosti (TsNISherstí).
(Textile fibers--Testing)

[illegible] kand. tekhn. nauk, starshiy nauchnyy sotrudnik

Observations concerning S.F. Ivantushkin's article "Efficiency of the utilization of the carding surfaces of the main cylinders of carding machines." Tekst. prom. 24 no.11:19-21 N '64. (MIRA 17:12)

1. TSentral'nyy nauchno-issledovatel'skiy institut sherstyanoy promyshlennosti.

SHUMILOV, G.A., starshiy nauchnyy sotrudnik

Analysis of slubs content of combed sliver. Tekst. prom. 25 no.10:67-69 O '65. (MIRA 18:10)

1. TSentral'nyy nauchno-issledovatel'skiy institut sherstyanoy promyshlennosti.

SHUMILOV, G.S.

Increasing the operational thermal efficiency of steam locomotives. Zhel. dor. transp. 37 no.8:28-32 Ag '55. (MIRA 12:8)

1. Starshiy mashinist depo Krasnyy Liman Donetskoy zheleznoy dorogi.
(Locomotives--Fuel consumption)

SHUMILOV, I.M.

Nonairtight pneumatic steering machines with sleeve-valve distribution. [Trudy] MVTU no.88:162-178 '58. (MIRA 12:4)
(Flying machines--Pneumatic equipment)

KOROBKO, M.I., kand. tekhn. nauk, red.; INOSOV, V.L., red.;
OLEFIR, F.F., red.; REZNIK, M.G., red.; PECHUK, V.I.,
red.; SHUMILOV, K.A., red.; PAVLENKO, V.N., red.

[Complete automation in steelmaking] Kompleksnaia avtomatizatsiia proizvodstva stali. Kiev, In-t tekhn. informatsii, 1963. 198 p. (MIRA 18:6)

1. Ukraine. Gosudarstvennaya planovaya komissiya. Institut avtomatiki.

SHUMILOV, K.A.; [illegible] V.N.; MIK[illegible]; [illegible]

Automatic control of the operation of blast furnaces with the help of electronic computers. Metallurg 10 no.6:3-5 Je '65. (MIRA 18:6)

1. Kiyevskiy institut avtomatiki.

vo V

Shumilov, K. D.

Determination of the Pressure of Metal on the Rolls. M. Z. Levin, M. F. Leshchinskii, K. D. Shumilov, and V. K. Prourzin. (*Stal'*, 1955, (11), 1033–1034). [In Russian]. Results of experimental determinations of rolling pressures on a continuous strip mill are presented and compared with calculated values. The temperature and width of the strip, the reduction, rolling speed, chemical composition, and mechanical properties of the metal were determined simultaneously.—S. K.

metal 4

Donets Industrial Inst.

137-58-1-633

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 1, p 99 (USSR)

AUTHORS: Levin, M. Z., Shumilov, K. D.

TITLE: Determining the Counterweight Required to Balance the Load on the Upper Roll of a Blooming Mill (K opredeleniyu vesa kontrgruza pri gruzovom uravnoveshivanii verkhnego valka blyuminga)

PERIODICAL: Tr. Donetsk. industr. in-ta, 1957, Vol 19, pp 65-67

ABSTRACT: In designing load balance, the starting point is the requirement that the pressure between the bearings of the upper roll and the clampdown screws must be 20-40 percent of the weight of the parts (P) to be counterbalanced; this yields a counterweight that is quite large. An analytical expression is derived for the relationship between the moment of the counterweight and the moment of the weight of the P to be counterbalanced, with allowance for the rated torque of the motor (M), the ratio of the starting torque of the M to its rated torque, the dimensions of the clampdown screws, the transmission train value from M to clampdown screws, the flywheel moment of the motor, and correction factors for the flywheel moment of

Card 1/2

137-58-1-633

Determining the Counterweight Required (cont.)

other parts and for the resistance of the friction forces between the P. An example of the determination of the magnitude of a necessary minimum counterweight is presented.

P.G.

1. Blooming mills--Rolls--Counterbalancing

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SOV/137-57-11-21405

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 11, p 106 (USSR)

AUTHORS: Levin, M.Z., Shumilov, K.D.

TITLE: Determining the Power of a Motor to Drive a Wire Reel (Opredeleniye moshchnosti dvigatelya dlya privoda provolochnoy motalki)

PERIODICAL: Tr. Donetsk. industr. in-ta, 1957, Vol 19, pp 73-75

ABSTRACT: Equations are presented for determination of the power (P) of the motor (M) required to drive reels in which the distribution of the wire (W) in annular form into a coil is done by a rotating cone. The total P of the M required to drive such reels is $N=N_1+N_2$ hp, where N_1 is the MP required to rotate the cone, this being calculated by the equation $N_1=ka^2V_r/75\eta$ hp (K being a coefficient for steel W), wherein K is $\pi \cdot 7800/4 \cdot 9.81=625$, d is the diameter of the W in m, V_r is the relative velocity of the W in m/sec, equal to the rolling rate, and η is the efficiency of transmission from motor to cone. N_2, the motor power required to strand the W, is found from the equation:

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SOV/137-57-11-21405

Determining the Power of a Motor to Drive a Wire Reel

$N_2 = \frac{0.4\, d^3 \sigma_s\, V_r}{7500\, D\, \eta}$ hp, where σ_s is the yield point of the wire material in kg/cm^2. D is the diameter of the reel of W.

V.D.

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S/123/61/000/002/008/017
A005/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1961, No. 2, p. 17, # 2V130

AUTHORS: Levin, M. Z., Shumilov, K. D., Leshchinskiy, M. F., Rafalovich, A. I., Dobronog, S. N.

TITLE: The Determination of the Pressures on the Rolls and the Power of the Motor of Roll-Straightening Machines

PERIODICAL: "Tr. Donetsk. industr. in-ta", 1959, No. 36, pp. 5-27

TEXT: Formulae are presented for determining the bending moments, the radii of curvature, the pressure on the rolls, and the power of the motor. A method is given for verifying the calculation formulae by the investigation of the straightening process of 8-20 mm thick sheets on a 7-roll plate-straightening machine. It is suggested to make more precise the calculation of roll-straightening machines by determining the power consumed by each roll to straightening a strip. The power is calculated from the total curvature (removable curvature + curvature of deflection); hereat, the deflection curvature is determined from the experimental magnitude of the depth of curvature, under the assumption that the bent axis of

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S/123/61/000/002/008/017
A005/A001

The Determination of the Pressures on the Rolls and the Power of the Motor of Roll-Straightening Machines

the strip section being straightened by the roll is a circular arc. It is mentioned that the straightening energy is required to both the plastic and elastic deformation of the strip; therefore, the calculation of the power without allowance for the elastic deformation work will be wrong. - There are 9 figures, 2 tables, and 1 reference.

Yu. Semenenko

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

LEVIN, M.Z.; SHUMILOV, K.D.

Determination of moments in the transmission coupling of a rolling mill during the gripping of metal by the rolls. Trudy DII 36 Ser.met. no.6:86-93 '59. (MIRA 14:9)

(Rolling mills--Transmission devices)

LEVIN, M.Z.; SEDUSH, V.Ya.; SHUMILOV, K.D.

Investigation of blast furnace tap guns. Izv. vys. ucheb. zav.; chern. met. no.10:167-171 '60. (MIRA 13:11)

1. Donetskiy industrial'nyy institut.
(Blast furnaces--Equipment and supplies)

SHUMILOV, K. D.; GORYUNOV, Yu. G.

Investigating lifting and tilting tables for three-high 2300 sheet mills. Izv. vys. ucheb. zav.; chern. met. 5 no.12: 188-196 '62. (MIRA 16:1)

1. Donetskiy politekhnickeskiy institut.

(Rolling mills—Equipment and supplies)

LEVIN, M.Z.; LESHCHINSKIY, M.F.; SHUMILOV, K.D.; SEDUSH, V.Ya.;
GORYUNOV, Yu.G.

Forces in pushing the metal through manipulator rolls on continuous billet mills. Izv. vys. ucheb. zav.; chern. met. 7 no.8:76-80 '64. (MIRA 17:9)

1. Donetskiy politekhnicheskiy institut.

SHUMILOV, L.

Eliminating transverse ridges on gravel roads. Avt.transp. 32
no.6:26 Je '54. (MLRA 7:9)
(Roads, Gravel)

SHUMILOV, L.D., inzh.

Road construction on barkhans. Avt. dor. 24 no. 1:14-15 Ja '61.
(MIRA 14:2)

(Kazakhstan—Road construction)

SHUMILOV, L.D., inzh.; LEBEDIKHIN, V.A., inzh.

Are separate technical specifications necessary for local roads?
Avt.dor. 24 no.6:31 Je '61. (MIRA 14:7)
(Roads--Standard)

SHUMILOV, L.D., inzh.

Some defects in the VSN 47-60 technical instructions. Avt. dor.
24 no.10:30-31 O '61. (MIRA 14:11)
(Road construction)

MITEL'MAN, B.I.; ROZENBERG, G.D.; SHUMILOV, L.P.

Additional pressure losses in the annular space resulting from the conveyance of cuttings. Trudy VNIIBT no.9:24-31 '63.
(MIRA 17:9)

AYRIYANTS, A.S.; MITEL'MAN, B.I.; ROZENBERG, G.D.; SHUMILOV, L.P.

Removing well cuttings from the well bottom zone in turbine drilling. Neft.khoz. 41 no.10:19-22 O '63. (MIRA 17:4)

L 40761-65

ACCESSION NR: AP5012327 UR/0286/64/000/022/0072/0072

AUTHOR: Lipatov, V. I.; Mitel'man, B. I.; Rozenberg, G. D.; Shumilov, L. P. 16 15 B

TITLE: Capillary viscosimeter of the closed type. Class 42, No. 166537

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 22, 1964, 72 10

TOPIC TAGS: viscous flow, viscous fluid, laboratory instrument

Translation: This inventor's certificate introduces a capillary viscosimeter of the closed type for measuring the rheological characteristics of non-Newtonian fluids under normal conditions and under high temperature and pressure conditions. The instrument consists of two thick-walled thermostatically controlled vessels (bombs) connected by a measuring line, a device for forced compression of the fluid being tested and a system for measuring pressure drops. In order to increase the accuracy in determining the rheological characteristics of the fluid being tested, the device for forced compression of the fluid is made in the form of balanced hydraulic plungers of different diameters. These plungers can be moved in any

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Card 2/2 mb

SHUMILOV, M., general-polkovnik, Geroy Sovetskogo Soyuza

Commanding officers and political personnel of the Soviet Armed Forces. Komm.Vooruzh.Sil 1 no.4:73-78 N '60. (MIRA 14:8)

(Russia--Armed forces--Officers)

(Russia--Armed forces--Political acitvity)

SHUMILOV, M. A.

SHUMILOV, M. A. --"Study of the Diffusion of Carbon in Iron and Nickel by a
Method Based on the Use of the Radioactive Isotope C^{14}."
*(Dissertations for Degrees In Science and Engineering
Defended at USSR Higher Educational Institutions)(29)
Min Higher Education USSR, Urals Polytechnic Inst imeni
S. M. Kirov, Sverdlovsk, 1955

SO: Knizhnaya Letopis' No 29, 16 July 1955

* For the Degree of Candidate in Technical Sciences

USSR/Solid State Physics - Diffusion, Sintering, E-6

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34752

Author: Gruzin, P. L., Polikarpov, Yu. A., Shumilov, M. A.

Institution: None

Title: Use of the C^{14} Isotope to Study the Diffusion of Carbon in Metals

Original Periodical: Zavod. Laboratoriya, 1955, 21, No 4, 417-423

Abstract: None

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Shumilov, M. A.

The use of the carbon-14 isotope for the study of carbon diffusion in metals. P. L. Gruzin, Yu. A. Polikarpov, and M. A. Shumilov. *Zavodskaya Lab.* 21, 417-23(1955).—The following procedure is recommended: Wrought iron (C = 0.02, Si = 0.01, S = 0.014, and P = 0.002%) was fused in a high-frequency furnace, and plates 12 × 12 × 8 mm. were prepd. from it. These plates (in duplicates) were immersed in a mixt. of $BaC^{14}O_3$ and activated charcoal, sealed in evacuated quartz ampuls and kept for 4 min. at 1200° in a furnace. The C distribution in both samples was found by its detn. in a thin layer surface of one sample, whereas the other sample was Cu-plated in a cyanide bath and heated for diffusional annealing in a vacuum (10^{-3} mm. Hg) at 350-850° and at 900-1050°, for lengths of time varying between 12 hrs. and 10 min. The heating was done stepwise, by preheating to the required temp. in a furnace maintained at the higher temp., and rapidly transferring the sample with an electromagnet to the next furnace where the sample was annealed. The layer activity in the annealed sample was detd. as usual. After verifying the results with austenite by their agreement with the best results in the literature, diffusion tests were run in ferrite, and the diffusion coeffs. detd. at 250, 500, 600, 650, 700, 725, 750, 800, and 850°. The diffusion in Ni was also studied. W. M. S.

[illegible]

126-1-38/40

AUTHORS: Strukov, I. N., Shumilov, M.A. and Gel'd, P. V.

TITLE: Influence of the heat treatment on the topography of calcium in ferrosilicon. (Vliyaniye termicheskoy obrabotki na topografiyu kal'tsiya v ferrosilitsii).

PERIODICAL: Fizika Metallov i Metallovedeniye, 1957, Vol.5, No.1, pp. 188-189 (USSR).

ABSTRACT: In earlier work (Refs.1 and 2), the authors showed that the stability of a high percentage commercial ferrosilicon during storing in humid air is dependent to a considerable extent on its thermal history. Particularly, it was found that annealing of ferrosilicon at temperatures which ensure decomposition of leboite leads to a sharp increase of the stability of the alloy. It was, however, not possible in the earlier work to solve unequivocally the problem of the causes of this effect during heat treatment, which could be explained on the one hand by the elimination from the alloy of a metastable phase, the decomposition of which is accompanied by an appreciable increase in volume and thus by occurrence of high internal stresses and on the other hand the possibility could not be excluded of redistribution of the admixtures which are responsible

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Influence of the heat treatment on the topography of calcium in ferrosilicon.

for the reduced stability of ferrosilicon (e.g. calcium-aluminium). For verifying the influence of heat treatment on the conditions of localisation of calcium, autoradiography investigations were carried out of hardened and annealed alloys. Ca^{45} was used as a radio-active isotope which has a β-radiation with a maximum energy of 0.255 MeV. Preliminarily, alloys were produced from mixtures of powders of commercial silicon and the Ca^{45} by heating inside an hermetically sealed ampule of armco iron in vacuum equipment at 900°C for two hours. The thus obtained material (fundamentally calcium silicide) was introduced with the iron ampule into the molten ferrosilicon containing 60 to 65% Si. After careful mixing of the metal in the crucible inside an induction furnace, specimens were prepared for investigation. On the polished surface photographic films НИКФИ, type MK, were placed; the exposure time was about ten days, the specific activity of the alloy was 0.8 to 1 m Curie/kg. Microscopic investigation of the autoradiographic pictures has shown that in the hardened specimens the calcium is distributed highly non-uniformly, concentrating mainly along the crystallite boundaries. However, for annealed specimens the difference in the calcium concentration at the surface and in the volume of the crystallites is considerably lower, see Fig.1, showing the distribution of calcium in a ferrosilicon specimen containing 60% Si after hardening and after annealing respectively. Thereby, homogenisation of the calcium distribution increases with increasing annealing duration and, consequently, also with the completeness of leboite decomposition. Subsequent hardening of the annealed specimen from 1000°C leads again to a preferential separation of calcium in the intercrystallite range, which can be eliminated by repeating the stabilisation annealing. Thus, the obtained data indicate that the solubility of calcium in leboite and in its decomposition products differs appreciably. This permits controlling the topography of calcium in a high percentage ferrosilicon by means of heat treatment. Annealing, which brings about a homogenisation of the calcium distribution, prevents local accumulations which could serve as loci of active interaction with the air

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Influence of the heat treatment on the topography of calcium in ferrosilicon.

moisture, i.e. as nuclei of disruption of the alloy. It is pointed out that annealing makes the alloy more stable also as a result of considerable breaking up of the grains. Consequently, heat treatment increases the stability of ferrosilicon during storage, apparently not only as a result of the considerations discussed in the earlier work (Refs.1 and 2) (internal stresses during ageing of the alloy) but also due to changes in the topography of calcium. It is, therefore, advisable to verify the effect of annealing on the distribution of other admixtures which play a role in the stability of the alloy.

(Note: This is a complete translation).

There are 1 figure and 2 references, both of which are Slavic.

SUBMITTED: January 23, 1957.

ASSOCIATION: Ural Polytechnical Institute imeni S. M. Kirov.
(Ural'skiy Politekhnicheskiy Institut imeni S.M.Kirova).

AVAILABLE: Library of Congress.

Card 4/4

SHUMILOV, M. A., Cand. Tech. Sci.

" An Investigation of the Mobility of Carbon Atoms in Steel and Alloys with the Use of the Isotope C^{14}, " with Gruzin, P. L., Dr. Phys. and Math. Sci., Babikova, Ye. F.; Borisov, Ye. V.; Peregudov, N. P.; Polikarpov, Yu. A.; Tirkina, A. N.; Fedorov, G. B., Cand. Tech. Sci., page 327.

In book Problems of Physical Metallurgy, Moscow, Metallurgizdat, 1958, 603p.
(Its: Sbornik trudov, v. 5)

The articles in the book present results of investigations conducted by the issuing body, Inst. of Physical Metallurgy, a part of the Cent. Sci. Res. Inst. of Ferrous Metallurgy, located in Dnepropetrovsk. The investigations were concerned with phase transformations in alloys, strengthening and softening processes, diffusion processes (studied with the aid of radioactive isotopes), and certain other questions.

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SOV/137-59-9-10629

187500

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, p 166 (USSR)

AUTHORS: Gruzin, P.L., Polikarpov, Yu.A., Fedorov, G.B., Shumilov, M.A.

TITLE: Investigations Into Carbon Diffusion in Alloys With the Use of the C^{14} Radioactive Isotope

PERIODICAL: V sb.: Metallurgiya i metallovedeniye, Moscow, AS USSR, 1958, pp 246 - 252

ABSTRACT: The authors investigated the diffusion of C in ferrite (alloyed with Ni, Mo, Cr, Mn) Si in austenite (alloyed with Si) and in Ni (alloyed with Cr, Co, Mo). The diffusion coefficient D was determined by the method of removing the layers and measuring the integral radioactivity of the remaining section of the specimen. Introduction of Si into the ferrite increased the pre-exponential multiplier D_0 and also the activation energy Q. The same effect was exerted by alloying with Ni, while Mo and Cr produced the greatest effect. Thus if the Mo content was 2.58%, D_0 increased from 0.2 to 20.0 cm^2/sec, and Q from 24.6 to 33.5 kcal/g-atom. The introduction of 0.93% Cr gave D = 16.4 cm^2/sec and Q =

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SHUMILOV, M.A.,

SOV/137-59-2-4054

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 2, p 248 (USSR)

AUTHORS: Gruzin, P. L., Babikova, Yu. F., Borisov, Ye. V., Zemskiy, S. V., Peregudov, N. P., Polikarpov, Yu. A., Tirkina, A. N., Fedorov, G. B., Shumilov, M. A.

TITLE: Study of the Mobility of Carbon Atoms in Steel and Alloys Using C^{14} Isotope (Izucheniye podvizhnosti atomov ugleroda v stali i splavakh pri pomoshchi izotopa C^{14})

PERIODICAL: Sb. tr. In-t metalloved. i fiz. metallov Tsentr. n.-i. in-ta chernoy metallurgii. 1958, Vol 5, pp 327-365

ABSTRACT: The authors examine methods for investigating the diffusion, electrolytic transfer, and distribution of C in Fe, Ni, and some of their alloys. Data were obtained by the direct (autoradiographic) method on the effect of Cr, Ni, Mo, and Si on the diffusion of C in ferrite; Ni and Si have appreciably less effect on the diffusion of C than the carbide-forming Cr and Mo. It was established that the diffusion-mobility level changes very little when the Fe and Ni are highly alloyed; it is displaced only when another base is used, as it happens in Fe-Cr, and under these conditions the mobility level of C approaches that of the

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alloying elements. It was experimentally verified that the C in Fe and Ni is in the cation state. It was established that the cation charge can change depending upon the character of the alloying element. Bibliography: 27 references.

M. G.

Card 2/2

SHUMILOV, M.A.

ДЕГАЗАЦИЯ СТАЛИ И СПЛАВОВ

М.А.Шумилов П.В.Гельд Ф.А.Сидоренко	Некоторые особенности процесса рассыпания ферросилиция.
Р.А.Рябов П.В.Гельд	Влияние углерода на водопроницаемость стали.
Г.Н.Окороков А.Ю.Поляков А.М.Самарин	Особенности раскисления стали при дуговом вакуумном переплаве.
А.М.Самарин М.П.Кузнецов Д.П.Ульянов Л.М.Новик А.И.Луцутов	Повышение качества бессемеровских рельсов методом вакуумной обработки в ковше.
Г.Н.Ойкс И.И.Ансимов Г.А.Соколов В.И.Данилин Б.Д.Кононов	Новая технология производства шарикоподшипниковой стали с применением вакуума.
П.Я.Агеев Б.Г.Чернов	Влияние легирующих на поведение кислорода и азота при плавке его в вакууме.
И.В.Попов Э.И.Серебрейский	Влияние технологических факторов вакуумной дуговой плавки на снижение содержания газов и неметаллических включений в нержавеющей стали.
Т.М.Воробьева И.П.Забелин Е. С.Калинников	Влияние вакуумирования при переливе из ковша в ковш на качество стали 30ХГСНА.

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report submitted for the 5th Physical Chemical Conference on Steel Production, Moscow-- 30 Jun 1959.

SHUMILOV, M.A.; SIDORENKO, F.A.

Solubility and diffusion of iron in silicon. Trudy Ural. politekh. inst. no.92:114-121 '59. (MIRA 13:12)
(Iron-silicon alloys--Metallography) (Solubility)

PETRUSHEVSKIY, M.S.; SHUMILOV, M.A.; SIDORENKO, F.A.

Phase constitution of iron-silicon-manganese alloys. Trudy Ural. politekh. inst. no.92:147-157 '59. (MIRA 13:12)
(Iron-Silicon-manganese alloys--Metallography)
(Phase rule and equilibrium)

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S/126/60/009/06/009/025
E111/E352

AUTHORS: Sidorenko, F.A., Gel'd, P.V. and Shumilov, M.A.

TITLE: Investigation of the Transformations of Alpha-lebeauite

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol 9, Nr 6, pp 861 - 867

ABSTRACT: The zeta phase (lebeauite) in the system iron-silicon (phase diagram in Figure 1) is of technological interest. The transformations of this phase have been studied by Gel'd and his co-workers (Refs 1, 8-11) and Abriksov (Ref 7); two modifications were established but the published data on the kinetics of the three reactions relate to alloys of technical purity. The present work describes the metallographic, dilatometric and X-ray analytical study of products of three possible reactions (see below) for high-purity alloys. Metallographic specimens were prepared from vacuum annealed carbonyl iron (grade R-4) and chemically purified silicon (99.95% Si and 0.03% Fe). Mixed powders were compressed into tablets and melted in a vacuum tungsten furnace, the cast specimens then being homogenized in vacuo at 1 080 °C for 100 hours. Dilatometric specimens were prepared from

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Investigation of the Transformations of Alpha-lebeauite

electrolytic iron and pieces of silicon single crystals; the melted alloy was sucked into 2-4 mm diameter quartz tubes, both untreated and homogenized specimens being tested by a procedure described previously (Ref 10). The microstructure was studied with a MIM-8 microscope and microhardness with a PMT-3 apparatus. Phase analysis was carried out by the Debye-Scherrer method. Figures 2, 4 and 5 show microstructures for the 57, 50 and 50% Si alloy after various annealing times and temperatures. Dilatometric curves for alloys containing lebeauite are shown in Figure 3. Some optical characteristics of lebeauite, facilitating the detection of its alpha and beta phases in alloys are given. The microhardness of the alpha and beta forms was found to be 630-780 and 750-850 kg/mm^2, respectively. The authors interpret their results in the following terms. In the first 15-20 min of annealing reaction I (decomposition of alpha into beta lebeauite and silicon) proceeds on the ε-phase and alpha-lebeauite phase boundaries, leading, in the presence of much monosilicide, to appreciable volume contraction of the system.

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E111/E352

Investigation of the Transformations of Alpha-lebeauite

With increasing thickness of the "pure" beta-lebeauite edge increased resistance to diffusion of iron and silicon leads to reduction in the rate of solid-phase reaction II (reaction of ε-phase with alpha-lebeauite to give the beta-lebeauite). With the appearance of eutectoidal (beta-lebeauite + Si) silicon its reaction with ε-phase to form beta-lebeauite begins (reaction III, leading to volume contraction). When the temperature is lowered to 660 °C changed rate of reaction II is reflected in an appreciable reduction in specimen length. The kinetics of the process are very sensitive to monosilicide particle dispersion and distribution (and hence the specimen geometry and treatment).
There are 5 figures and 12 references, 10 of which are Soviet and 2 are English.

ASSOCIATION: Ural'skiy politekhnicheskiy institut im. S.M. Kirova
(Ural Polytechnical Institute im. S.M. Kirov)

SUBMITTED: January 11, 1960

Card 3/3

SHUMILOV, M.A.; GEL'D, P.V.

Effect of impurities on the crumpling of iron-silicon alloys.
Trudy Ural. politekh. inst. no.105:129-135 '60. (MIRA 14:3)
(Iron-silicon alloys—Metallography)

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PHASE I BOOK EXPLOITATION SOV/5411

Konferentsiya po fiziko-khimicheskim osnovam proizvodstva stali. 5th, Moscow, 1959.

Fiziko-khimicheskiye osnovy proizvodstva stali; trudy konferentsii (Physicochemical Bases of Steel Making; Transactions of the Fifth Conference on the Physicochemical Bases of Steelmaking) Moscow, Metallurgizdat, 1961. 512 p. Errata slip inserted. 3,700 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii imeni [illegible] A. Baykova.

Responsible Ed.: A. M. Samarin, Corresponding Member, Academy of Sciences USSR; Ed. of Publishing House: Ya. D. Rozentsveyg. Tech. Ed.: V. V. Mikhaylova.

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Physicochemical Bases of (Cont.) SOV/5411

PURPOSE: This collection of articles is intended for engineers and technicians of metallurgical and machine-building plants, senior students of schools of higher education, staff members of design bureaus and planning institutes, and scientific research workers.

COVERAGE: The collection contains reports presented at the fifth annual convention devoted to the review of the physicochemical bases of the steelmaking process. These reports deal with problems of the mechanism and kinetics of reactions taking place in the molten metal in steelmaking furnaces. The following are also discussed: problems involved in the production of alloyed steel, the structure of the ingot, the mechanism of solidification, and the converter steelmaking process. The articles contain conclusions drawn from the results of experimental studies, and are accompanied by references of which most are Soviet.

Card 2/16

Karasev, V. P., and P. Ya. Ageyev. Feasible Ways of Accelerating the Deoxidation of Metal 432

PART IV. THE APPLICATION OF VACUUM AND THE GAS CONTENT IN STEEL

Shumilov, M. A., P. V. Gel'd, and F. A. Sidorenko. Some Specific Features of the Process of Ferrosilicon Disintegration 445

Gel'd, P. V., and R. A. Ryabov. Effect of Carbon on the Permeability of Steel to Hydrogen 457

Novik, L. M., A. M. Samarin, M. P. Kuznetsov, A. I. Lukutin, and D. P. Ul'yanov. Improving the Quality of Rails Made of Bessemer-Converter Steel by Applying Vacuum Treatment 461

Oyks, G. N., V. I. Danilin, I. I. Ansheles, G. A. Sokolov, and

SABIRZYANOV, A.V.; SHUMILOV, M.A.; GEL'D, P.V.; OZHGIKHINA, G.V.

Solubility of aluminum in ζ-leboite. Fiz. met. i metalloved. 12 no.5:714-721 N '61. (MIRA 14:12)

1. Ural'skiy politekhnicheskiy institut imeni S.M.Kirova.
(Iron-silicon-aluminum alloys--Metallography)

SHUMILOV, M.A.; SABIRZYANOV, A.V.; GEL'D, P.V.

Effect of aluminum, calcium, and phosphorus on the stability of α-lebeauite. Izv.vys.ucheb.zav.; chern.met. 5 no.4:109-117 '62. (MIRA 15:5)

1. Ural'skiy politekhnicheskiy institut.
(Ferrosilicon—Metallography) (Phase rule and equilibrium)